

NOTES ON THE BOTANY OF THE INTERIOR OF
NEW SOUTH WALES.

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(Plates xxxix-xl., fig. 3.)

PART I.—FROM THE DARLING RIVER AT BOURKE TO COBAR.

In following my duties as a Mining Surveyor in the Western District, opportunities have been afforded of observing the flora in certain parts of the interior of New South Wales, and though I do not claim to have made a complete botanical survey, but have only noted the principal trees in passing along, I have thought that the information thus acquired might be acceptable. My endeavour has been to prepare it in such a way as to be useful to a student in the field passing over the same country, and to serve as a record for future reference.

I am indebted to Mr. J. H. Maiden, F.L.S., Director of the Botanic Gardens, and Mr. R. T. Baker, F.L.S., Curator of the Technological Museum, for assistance in identifying some of the plants.

The country dealt with in Part I. of this paper extends from Bourke to Cobar, but I propose to subsequently speak of the principal trees met with thence to the Bogan, Lachlan, and Murrumbidgee Rivers.

Starting at Bourke on the Darling River we have *Eucalyptus rostrata*, Schl., (River Red Gum), following the banks of the stream, where is also *Nicotiana glauca*, a tobacco plant introduced from South America. On the level river country a conspicuous tree is *Eucalyptus microtheca*, F.v.M., (Coolabah), which is easily identified by its rough grey bark all over the trunk, and its

perfectly smooth white limbs. Another tree very similar in general appearance, as both have pale leaves and a drooping habit, is *E. largiflorens*, F.v.M., though a little inspection soon enables one to separate them, as the latter has the grey bark covering the branches as well as the trunk. Moreover the fruits are quite different, those of *E. microtheca* being readily identified by the short calyx and exerted valves. Both are considered to be "Box" trees. There seems to be a variety of *E. largiflorens* with greener and broader leaves than the type, but the fruits are identical.

All these trees—*E. microtheca*, *E. largiflorens* and its variety, according to my observations—grow only on what is known as the river or black soil country, and never away on the hills. They are of crooked growth, and average about 30 to 40 feet high. Over the country which is now being described, *E. microtheca* was only found extending as far as 12 miles south of Bourke, ceasing with the black soil, though it goes northward through Queensland; while *E. largiflorens* was noted again on the Bogan 30 miles above Nyngan, and also on the Lachlan at Condobolin.

Leaving the Darling River the road taken from Bourke was towards Cobar, which is south about 100 miles. For the first 9 miles no other Eucalypts were noted except *E. microtheca* and *E. largiflorens*, the next to appear being *E. populifolia*, Hook., (Bimble Box, often called Shiny-leaf Box), and this tree continued practically the whole way to Condobolin.

Other trees passed during the first 10 miles were:—

Heterodendron oleæfolium, Desf., (Rosewood).

Exocarpus aphylla, R.Br., (Stiff Cherry).

Atalaya hemiglauca, F.v.M., (Whitewood; aboriginal name "Bulcan"). The wood of this tree is attacked by a boring insect almost as soon as cut. I have known miners use it in pegging land. In two months the pegs were riddled, and each stood in a little heap of sawdust.

Cassia artemisioides, Gaud., (Cooma Bush), "a shrub with yellow flowers."

Acacia stenophylla, A. Cunn., following a damp course.

Acacia Oswaldi, F.v.M., (Dead Finish or Miljee).

Ventilago viminalis, Hook., (Supple Jack). This vernacular name arose from the fact that the branches and stems of these trees often entwine, thereby presenting some similarity to the vines known as Supple Jack on the coast.

At 9 miles, on a low quartzite ridge, are:—

Acacia aneura, F.v.M., (Mulga) which is about the principal fodder tree between Bourke and Cobar in times of drought.

Grevillea striata, R.Br., (Beefwood, from the wood being prettily marked with medullary rays).

Atalaya hemiglauca and *Owenia acidula*, F.v.M., (Colane or Gruie).

E. populifolia and *Geijera parviflora*, Lindl., (Wilga) a beautiful shade tree common all over the western district, and one of those few trees which has only one vernacular name. Often heated controversy arises in the bush owing to one species having about half-a-dozen vernacular names, or the one vernacular name is sometimes applied to several trees in different localities.

Again near the road is *Apophyllum anomalum*, F.v.M., (Currant or Warrior Bush).

Just before reaching the 12 mile post *Eucalyptus microtheca* and *E. largiflorens* cease, and the former is seen no more. Then we have:—

Eremophila Mitchelli, Benth., aboriginal name "Budtha," and sometimes called Sandalwood from the fragrance of the wood, but not to be confused with the Sandalwood of Western Australia, *Santalum cygnorum*. "Budtha" is one of the strongest scented woods of the western district, and the trees are commonly up to nine inches in diameter; but, unfortunately, when they attain that size they generally show a strip of decay up one side which seriously impairs their usefulness.

Capparis Mitchelli, Lindl., (Wild Orange, as it bears a fruit somewhat similar to an orange in shape and size, and moreover the trees are thorny).

Casuarina Cambagei, Baker, (Belah). This is the only Casuarina wood that does not show the medullary rays, although they

are to be seen in the upper branches. In the Bourke to Cobar district the Belah has a very glaucous appearance, which is possibly one of the reasons why it was confused with *C. glauca* in the past. Towards the Lachlan the branchlets are greener.

Acacia excelsa, Bentham (Ironwood, from the hardness of the wood, which is brittle and inclined to splinter).^{*} Mature trees have a clean trunk and drooping foliage (Pl. xl., fig. 3), but the young trees are covered with branches on the trunk. A curious feature of many interior trees is the protection afforded by spreading growth and numerous branches in young stages as compared with that of after years. Several species have this peculiarity, among others being *Acacia excelsa*, *Grevillea striata*, *Capparis Mitchelli*, and perhaps most of all *Flindersia maculosa*, F.v.M. In the Agricultural Gazette of New South Wales (Vol. x., Part 11), Mr. W. S. Campbell, F.L.S., has drawn attention to this matter in an interesting illustrated article.

Acacia aneura is next noticed.

Near the 12 mile post is a clump of trees of a species of *Acacia* commonly called Gidgea. This is a well known north-western tree, as the timber is much sought after for stockwhip handles, owing to its durability, hardness and dark colour. Fence posts of Gidgea on the Hungerford-road, north of Bourke, said to have been in the ground 30 years, are still good. One unpleasant feature of this tree is the most disagreeable smell of the leaves in wet or approaching wet weather, reminding one of decaying cabbage. I am informed that at one Queensland town where there is a clump of Gidgea seven miles distant, these trees with a suitable wind at times give most unmistakable evidence of their presence. In appearance they somewhat resemble a large form of Yarran, *Acacia homalophylla*, A. Cunn. Generally speaking Gidgea is said to extend from Bourke northwards, and after

^{*} This species was identified by Mr. R. T. Baker, who informs me that it is a Queensland tree, and has not been recorded for New South Wales. He exhibited a specimen of the wood at the June meeting of the Society. Height up to 40 or 50 feet.

passing this clump 12 miles south of that town, no more is seen on the road to Condobolin.

So far I have not been able to satisfactorily identify this species, and have reason to think that there has been some confusion with *Acacia homalophylla* (Yarran). Its nearest affinity certainly seems to be with this species. In the "Flora Australiensis" (Vol. ii., p. 383) the phyllodia are spoken of as being "very finely striate with parallel veins only to be seen under a lens." Now this could not refer to Gidgea, as the veins in the leaves are quite distinct; while in Yarran there are often none visible, a difference generally noticeable even in dried specimens. Again *A. homalophylla* is found in Victoria, but it is usually understood in the west that Gidgea does not occur much south of the Bourke district. In fresh specimens there are two very simple and decisive tests for these trees. One is to damp the leaves, and Gidgea will soon proclaim itself by the smell; the other is to double the leaf between the thumb and finger, and if a Yarran it will snap right off and seldom hang by even the slightest fibre, while the veins in the Gidgea leaf will prevent it from snapping at all. This test is no use in dried specimens, as both will snap readily. Gidgea wood is darker, stronger and heavier than Yarran, but in the bark and general appearance the trees are somewhat similar. Gidgea is the larger tree of the two, and when compared with Yarran of mature growth is the more umbrageous.

In botanical specimens there is no doubt it is difficult to separate these two species, though in the field they are seldom confused. Gidgea foliage has always appeared to me as fairly dark green, and Yarran more of a yellow-green; though curiously in the herbarium the leaves of the former dry nearly white, and those of Yarran often appear dark beside them. Still here they can generally be identified even in very old specimens, as a stray leaf of the Gidgea may have been doubled or twisted in the pressing and have retained its bent form. Should a Yarran leaf be doubled in pressing it will snap.

Assuming that both these trees have been placed under *A. homalophylla*, an assumption which may be disputed, the question then arises which is the type. The evidence on this point is in favour of Yarran. In the first place the species was described by Allan Cunningham, who must certainly have seen Yarran in his exploration trip across the Liverpool Plains and on to the Darling Downs in 1825. The country from Bourke northward in which Gidgea grows was not visited by a white man till Sturt reached it in 1828, so that it seems possible that Cunningham never saw Gidgea. But if he did, he would scarcely have described the western tree, and have ignored the species through which he had been passing for at least 150 miles.

According to Mr. F. M. Bailey, F.L.S., Government Botanist of Queensland, there is an *Acacia* with a strong smell towards the western boundary of that colony on the Georgina River, and evidently to distinguish it from the original Gidgea (or Gidgee as it is often spelt) of Bourke to Charleville this tree is called Georgina Gidgee (*Acacia georginae*, Bail.). In describing the phyllodia of this tree ("The Queensland Flora," Part ii., p. 495) Mr. Bailey writes, "texture thick, hard and brittle." Now this differs from the Bourke tree, as in it the leaves are neither thick nor brittle. The pods so far as seen are also quite different.

I understand that Mr. Baker is now dealing with this matter, and may soon clear it up.

Near the 12 mile post are found :—

Flindersia maculosa (Leopard Tree, from its spotted bark). The wood of this tree is not much used, as it is attacked by a borer almost as soon as cut, if left in the open; still a specimen which I have had indoors for two years is perfectly sound. A gum exudes considerably from this tree.

Hakea leucoptera, R.Br., (Needlewood: famous for pipe-making.)
Grevillea striata.

At 13 miles :—

Eremophila longifolia (Emu-bush, because the emus eat the fruit).

Dodonaea viscosa, var. *attenuata*, A. Cunn., (Hopbush).

Heterodendron oleaefolium.

Atalaya hemiglanca.

Eucalyptus populifolia.

Pittosporum phillyræoides, DC., a graceful tree up to 20 ft. high, with drooping foliage and yellow fruit. "Berrigan" is said to be the aboriginal name for it on the Lachlan.

At 16 miles a new Eucalypt with pale leaves appears, *E. intertexta*, Baker, and continues practically the whole way to Condobolin, crossing to the south of the Lachlan. It is known variously as "Gum," "Coolabah," "Yellow Box," "Red Box," "Bastard Box," and is one of the largest trees in the west. It gets its name of Gum from its upper bark on the trunk, and branches being white and smooth, while the lower is light brown and flaky, but the hardness of the wood, which is red and difficult to split, proclaims its affinity to the Box trees.

Between the 16 and 43 mile posts, besides *Eucalyptus populifolia* and *E. intertexta*, which continue all the way, and are the only Eucalypts, there are:—

Capparis Mitchelli.

Loranthus linearifolius, Hook., (a mistletoe with pink flowers in May, growing on *Flindersia maculosa*).

L. Exocarpi, Behr, (a mistletoe with yellow flowers in May, growing on *Acacia aneura*).

Heterodendron oleaefolium, rather a dwarf form known as Blue Bush from its glaucous leaves. This species is altogether of diminutive size about Bourke and Cobar, and becomes much larger towards the south-east.

Acacia Burkittii, F.v M., (Needle Bush), growing in clumps of a few acres, about 6 or 8 feet high.

At 27 miles are:—

Acacia homalophylla, (A. Cunn.), rather a drooping form of Yarran, but not *Acacia pendula*, A. Cunn.

A. excelsa.

Grevillea striata.

Eremophila Mitchelli, a common tree throughout the western district.

Geijera parviflora.

Acacia Oswaldi.

Apophyllum anomalum.

Atalaya hemiglauca.

At 30 miles are :—

Haakea leucoptera.

Sterculia diversifolia, G. Don, (Currajong).

Cassia artemisioides.

At 40 miles are :—

Ventilago viminalis.

Santalum lanceolatum, R.Br. This is a tree with light brown bark and very pale wood, often called "The Blacks' Medicine Tree," from the fact that the bark soaked in water was formerly used by the aborigines for medicinal purposes.

About 8 miles west of this point is *Fusanus acuminatus*, R.Br., (Quandong), growing on Gundabooka Mountain, the formation of which appears to be Devonian Sandstone.

Leaving the main road at 43 miles, going south-westerly to Wilgaroon Station and returning to the main road at 55 miles from Bourke or 43 miles from Cobar, the trees and shrubs noted, in addition to those of the last 20 miles, are :—

Pimelea microcephala, R.Br.

Myoporum deserti, A. Cunn., (Dogwood), a few trees.

Casuarina Cambagei, Baker.

Eremophila latifolia, F.v.M., (Tea Bush, because a beverage fit to drink is said to have been made from the leaves).

Scaevola spinescens, R.Br.

Alstonia constricta, F.v.M., (Quinine), which grows to a height of about 20 feet, and seems to be always on elevated land, avoiding the flats. It has more of a rough cork bark than the tree of this species growing in the Botanic Gardens.

Canthium oleifolium, Hook., (Wild Lemon, from the colour of the leaves, and general appearance of the tree, but the fruits are quite small and in clusters).

From 43 miles north of Cobar to Mount Drysdale at 22 miles are :—

Sterculia diversifolia.

Acacia aneura.

Eucalyptus terminalis, F.v.M., (Bloodwood), found on Mount Dijou 5 miles east, where I collected it in June, 1892, but I can hear of it nowhere south of this.

At 41 miles are :—

Fusanus acuminatus.

Jasminum lineare, R.Br., a climber.

Lyonsia eucalyptifolia, F.v.M., one of the largest western climbers.

At 40 miles are :—

Celastrus Cunninghamii, F.v.M.

Beyeria viscosa, Miq.

Eucalyptus Morrisii, Baker, the most stunted form of Mallee in the Cobar district; and considered the easiest to eradicate.

E. viridis, Baker, (Narrow-leaf or Whipstick Mallee).

Acacia doratoxylon, A. Cunn., (Currawong).

Acacia decora, Reichb., (Silver Wattle).

At 33 miles from Cobar *Flindersia maculosa* ceases on this road, though it extends westerly.

At 29 miles the first White Pine, *Callitris robusta*, R.Br., is met. In coming from Bourke to Nyngan in the train the first of this species is seen between Coolabah and Girilambone at about 85 miles south-easterly from Bourke. This is about east of the point where it is met on the Bourke to Cobar road at about 70 miles south of Bourke.

Atalaya hemiglauca ceases near the 30 mile post from Cobar, and is seen no more on this trip.

Most of the trees mentioned between the 16 to 40 miles from Bourke continue to Mount Drysdale.

I was informed that five miles west of Drysdale there are a few acres of *Acacia harpophylla*, F.v.M., (Brigalow), but was unable to go and see it.

From Mount Drysdale to Cobar, 23 miles, *Alstonia constricta* was no more seen, and I think its habitat is northerly. The following were noted :—

<i>Helichrysum Cunninghamii</i> ,	<i>Geijera parviflora</i> ,
Benth.	<i>Acacia Oswaldi</i> ,
<i>Eucalyptus Morrisii</i> ,	<i>Apophyllum anomalum</i> ,
<i>Acacia doratoxydon</i> ,	<i>Eremophila Mitchelli</i> ,
<i>Acacia decora</i> ,	<i>Acacia homalophylla</i> ,
<i>A. excelsa</i> ,	<i>Heterodendron oleaeifolium</i> ,
<i>Eucalyptus intertexta</i> ,	<i>Dodonaea viscosa</i> , var. <i>attenuata</i> ,
<i>E. populifolia</i> ,	<i>Acacia Burkittii</i> ,
<i>Grevillea striata</i> ,	<i>Canthium oleifolium</i> ,
<i>Acacia aneura</i> ,	<i>Callitris robusta</i> .

The above are given in the order in which they were met with.

At the 20 mile post :—

On the left are about a dozen acres of Mallee, *Eucalyptus oleosa*, F.v.M., often called Red Mallee from the colour of the wood.

Then there are :—

Fusanus acuminatus,
Sterculia diversifolia, an excellent fodder tree, but limited in quantity),

Hakea leucoptera,
Acacia decora,
Capparis Mitchelli.

Except for one tree seen near the 11 mile post, *Grevillea striata* ceases near the 16 mile post and is seen no more on this trip.

At 15 miles is *Santalum lanceolatum*.

At 13 miles is *Cassia eremophila*, A. Cunn. This shrub is interesting on account of its leaves. Generally they are round and needle-shaped, but in some cases are found in gradations from flat to round, the intermediate forms showing various stages of folding. Some are round, but show a small fluting up one side as if the rounding is not quite completed. In observing this shrub from near Bourke to Condobolin and Parkes,

it became evident that the rounded form is most common in the northern locality, and that the leaf assumes the flattened shape as the species comes south-easterly. Or comparing it with climatic conditions, the rounded leaf is general in the hotter part and the flat leaf in the cooler, though I can only speak of the country now being described. The pods and yellow flowers are the same throughout.

At 12 miles :—*Acacia homalophylla*,

Eucalyptus intertexta,

E. populifolia.

At 7 miles :—*E. oleosa*.

At 6 miles :—*Casuarina Cambagei*.

At 5 miles :—*Geijera parviflora*,

Acacia aneura,

Eremophila Mitchelli,

Callitris robusta,

Exocarpus aphylla,

Capparis Mitchelli,

Acacia colletioides, A. Cunn., (Pin Bush),

A. hakeoides, A. Cunn., (in some western localities called
Black Wattle),

A. excelsa,

Demia quinquepartita, F.v.M., a climber.

At 3 miles :—*Hakea leucoptera*,

Eucalyptus dumosa, A. Cunn.,

E. viridis,

Fusanus acuminatus.

At 2 miles :—*Pittosporum phillyreoides*,

Myoporum deserti,

Ventilago viminalis, (not seen again after passing Cobar).

The distance travelled from Bourke to Cobar is about 100 miles, and altogether nine Eucalypts were seen, viz. :—

E. rostrata (only along the river), *E. microtheca*, *E. largiflorens*, *E. populifolia*, *E. intertexta*, *E. Morrisii*, *E. viridis*, *E. oleosa* and *E. dumosa* in the order named. About midway and five miles east of the road is *E. terminalis*.

Four of these species are what are known as Mallees, a name applied to those dwarf Eucalypts which throw out a cluster of stems from one root, and also grow in clumps or scrubs from a few acres up to several hundred. They prefer slightly elevated land (not necessarily high ridges), never being found on river flats. In this they are the exact antithesis of *E. microtheca* and *Acacia pendula* (Myall or Boree). The leaves are full of oil, and around Cobar where these trees are plentiful there is certainly a great future in store for the oil industry. As the trees are short the leaves are easily accessible, and pruning them stimulates the growth, so that it might almost be said the supply is inexhaustible.

The Mallees are all easily separated by their fruits, but a bushman would recognise *E. Morrisii*, Baker, as being the shortest, having fairly broad leaves, rather rough flaky brown to grey bark, getting whiter near the top, the softest wood, and being more easily torn out by the roots than any of the others. The fruits are large, often in threes, and might be confused with some forms of *E. tereticornis*, Sm., or *E. viminalis*, Labill. The trees average from 10 to 15 ft. high, with a diameter from 2 inches to 6 inches. The wood reminds one of *E. dealbata*, F.v.M., and in other ways seems to have affinities with it, but I have seen both growing on one hill, and they are quite distinct.

E. viridis, Baker, is known as Whipstick Mallee from its erect slender stems. Its fruits are generally small, but vary in size very much. The bark is brown at the base and white above. This is the most easily distinguished of all the Mallees owing to its narrow green leaves. In some cases it grows as a single tree 50 feet high and a foot in diameter. The wood is hard. The form of Mallee growing at Mount Victoria, and known as *E. stricta*, Sieb., might, apart from the fruits, be confused by a casual observer with *E. viridis* owing to a similarity in the texture of the leaves.

E. oleosa, F.v.M., is often called Red Mallee from the colour of the wood. Its stems are slightly crooked, and have rather a

spreading habit. This species also grows into fairly large trees 50 feet high, and is then known as Big or Giant Mallee. Its fruits are rather large, being slightly barrel-shaped, with the greatest diameter in the middle. For utility, its wood, which is hard, stands before any of the other three.

E. dumosa, A. Cunn., is known as White Mallee from its having white smooth bark to the ground. It is generally found growing with *E. oleosa*, and these two form Mallee scrubs, sometimes associated with *E. viridis*, but the latter will often form a scrub by itself, as also will *E. Morrisii* to a less extent.

E. dumosa and *E. oleosa* might be confused in the field through growing together and the great similarity in their leaves. Their fruits at once separate them, those of *E. dumosa* being generally the larger and not constricted at the rim. A characteristic difference in general appearance is that the stems of *E. dumosa* are erect and white, while those of *E. oleosa* are more spreading, slightly crooked, and have the lower parts covered with brown flaky bark (Pl. xxxix., figs. 1-2). Both have hard wood. It may here be mentioned that no other Mallees except these four were met with north of the Lachlan on this road.

One feature noticed all through was that all these species prefer sedimentary formation, generally Silurian slate, and rarely grow on igneous rocks.

The only Casuarina noticed between Bourke and Cobar was *C. Cambagei*, Baker.

The Acacias were *A. stenophylla*, *A. Oswaldi*, *A. aneura*, *A. excelsa*, *A. sp.*, (Gidgea), *A. Burkittii*, *A. homalophylla*, *A. doratovylon*, *A. decora*, *A. colletioides* and *A. hakeoides*.

Generally speaking the country traversed is level, but along the southern half towards Cobar a few hills of sedimentary origin rise a few hundred feet above the surrounding plain.

The view from one of these tops is very different from anything to be seen near the coast, and less beautiful. Still it is well worth seeing, and there is a weird charm in the great expanse of wilderness which appears on every side.

Other hills can be seen rising here and there at distances up to 30 or 40 miles away. From the base of one to the other the land is so level that in a good season it looks like a green carpet extending for miles, and the heads of the waving Mallee remind one of a field of maize. But too often the carpet seems horribly worn into great patches of red and brown, and the drought-stricken land, denuded of all grass and herbage, glares through the straggling foliage.